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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,733	12/08/2000	Sang Yoon Park	0465-0780P-SP	1109
2292	7590	02/20/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			KEANEY, ELIZABETH MARIE	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,733

Applicant(s)

PARK ET AL.

Examiner

Elizabeth Keaney

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of the Remarks and Amendments filed 7 November 2003.

The indicated allowability of claim 1 from the previous Office Action (dated 7 August 2003) is withdrawn in view of the recognition that the following prior art teaches the subject matter of claim 1. Any inconvenience is regretted. Rejections based on the newly cited references are found below.

Drawings

Figure 5 is objected to because of the following:

- figure labels 101 and 110 are pointing to the same element.
- the specification discloses (page 9, line 7) that the band (110) is replaced with the wire (130) however both elements are found in the figure.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al. (US Patent 5,965,974; hereinafter Saito).

Re claim 1: Saito discloses, in figure 1 and throughout the disclosure, an implosion proof structure in a flat cathode ray tube having a panel, comprising:

- implosion proof means (7) strapped on an outer circumferential surface of a funnel (6) in the vicinity of the panel (1) of the flat cathode ray tube.

The Examiner notes the claim limitation “atmospheric pressure is exerted as the flat cathode ray tube is evacuated” is drawn to an inherent property of all evacuated cathode ray tubes.

The Examiner has defined the funnel to include the “outer periphery of the panel” after the panel portion and the funnel portion are bonded together. Therefore, Saito teaches the implosion proof means being strapped to the outer circumferential surface of the funnel.

Re claim 2: Saito discloses the implosion proof means having a strapping tension in a range of 600-3000 kgf (column 5, line 39).

Re claim 3: Saito discloses, in figure 1 and throughout the disclosure, the outer circumferential surface of the funnel (6) includes a flat portion perpendicular to the panel ("outer periphery of the panel").

Re claim 4: Saito discloses the implosion proof means is a band (column 4, line 2) with a required yield strength (column 4, line 30-31).

Re claim 5: Saito discloses, in figure 1 and throughout the disclosure, the outer circumferential surface of the funnel (6) has a width larger than a width of the implosion proof means (7), wherein the implosion proof means is a band (column 4, line 2).

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Dougherty et al. (US Patent 4,930,015; hereinafter Dougherty).

Dougherty discloses, in figure 3 and throughout the disclosure, an implosion proof structure in a flat cathode ray tube having a panel, comprising:

- implosion proof means (32,60,64) on an outer circumferential surface of a funnel (22) in the vicinity of the panel (10) of the flat cathode ray tube.

Claims 9,10,11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Den Brink et al. (US Patent 6,504,298; hereinafter Van Den Brink).

Re claim 9: Van Den Brink discloses, in figure 1B and throughout the disclosure, an implosion proof structure in a flat cathode ray tube having a panel, comprising:

- implosion proof means (17) coated (column 4, line 30) on an outer circumferential surface of a funnel (4) in the vicinity of the panel (2) of the flat cathode ray tube, the implosion proof means being a coat of hardening adhesive with a required yield strength after it is hardened (column 3, line 40).

The Examiner notes the claim limitation "atmospheric pressure is exerted as the flat cathode ray tube is evacuated" is drawn to an inherent property of all evacuated cathode ray tubes.

Re claims 10 and 11: Van Den Brink discloses the hardening adhesive having a thickness and a width (column 3, line 40).

Re claim 12: Van Den Brink discloses the hardening adhesive formed of polyurethane (column 3, line 40), which has a difference in thermal expansion/contraction coefficients between the hardening adhesive, after it is hardened, and the funnel to be below approximately $5 \times 10^{-7} / ^\circ\text{C}$.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suehiro et al. (US Patent 4,858,016; hereinafter Suehiro) in view of Dougherty.

Re claim 1: Suehiro discloses, in figure 2 and throughout the disclosure, an implosion proof structure in a cathode ray tube having a panel, comprising:

- implosion proof means (2) strapped on an outer circumferential surface (3a,b,c,d) of a funnel (1) in the vicinity of the panel of the cathode ray tube.

However, Suehiro fails to teach or fairly suggest the cathode ray tube being flat.

Dougherty discloses the use of an implosion proof means on either a flat or concave cathode ray tube (abstract, line 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the implosion means disclosed by Suehiro with a flat cathode ray tube because the implosion band would aid in prevention of the breakage of the CRT envelope.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito.

Saito shows all the limitations as shown above.

However, Saito fails to disclose the flat portion equal to or greater than 16 mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a flat portion equal to or greater than 16 mm, since the

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applicant has not disclosed that a flat portion equal to or greater than 16mm solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with a flat portion less than 16mm as long as it is wider than the band.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito.

Saito shows all the limitations as shown above.

However, Saito fails to teach or fairly suggest the implosion proof means being a wire having a radius greater than 2.5mm.

An implosion wire having a radius greater than 2.5mm and an implosion band are well known functional equivalents within the art. Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute an implosion wire having a radius greater than 2.5mm for that of an implosion band because it would equally prevent the envelope of a CRT from shattering.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink in view of Capek et al. (US Patent 5,127,865; hereinafter Capek).

Re claim 13: Van Den Brink shows all the limitations as shown above.

However, Van Den Brink fails to teach or fairly suggest the hardening adhesive being ceramic.

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Capek discloses the use of ceramic as an anti-implosion material (column 4, line 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute ceramic for the hardening adhesive disclosed by Van Den Brink because ceramic is an acceptable anti-implosion material and therefore prevents the CRT envelope from shattering.

Re claim 14: Capek discloses the use of ceramic as an anti-implosion material, therefore it has a difference in thermal expansion/contraction coefficients between the ceramic adhesive after it is hardened and the funnel to be below approximately $5 \times 10^{-7}/^{\circ}\text{C}$.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- US Patent 3,716,661 discloses several implosion proof structures including strapping and coating.
- US Patent 4,031,553 discloses an implosion proof structure on the outer circumference of the funnel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Keaney whose telephone number is (571)272-2489. The examiner can normally be reached on Monday-Thursday 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571)272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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